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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/031,050	11/12/2002	Johathan Bridge Fletcher	7442-2	8701

7590 07:06/2004

Thomas Q Henry  
Woodward Emhardt Naughton Moriarty & McNett  
Bank One Tower Suite 3700  
111 Monument Circle  
Indianapolis, IN 46204

EXAMINER

SORKIN, DAVID L

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 07/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/031,050	<b>Applicant(s)</b> FLETCHER ET AL.	
	<b>Examiner</b> David L. Sorkin	<b>Art Unit</b> 1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2002.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 November 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.84(q) because in Fig. 2 the reference character "6" must be supplied with a lead line. Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, 4, 7 and 11-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Pfeiderer (US 254,042). Regarding claim 1, Pfeiderer ('042) discloses a mixing machine comprising a mixing chamber (A) in which there are disposed two rotors arranged for rotation in opposite directions about respective rotational axes (see gears B' in Fig. 1), at least on of the rotor having an axially extending projection (C or a portion thereof; see especially the embodiments of Figs. 3 and 4) and being rotatable to present a leading face of the projection to the material being mixed, wherein the leading face has a discontinuity (at the terminus of gap c, near the axial middle of the rotor) in its profile along the axial direction of the rotor so as to defined first and second portions (the first portion being the gap c, and the second portion being the remainder), the leading face of the first portion being concave and the leading face of the second portion being convex (see drawings). Regarding claim 2, each projection has a tip that defines a surface facing a substantially complimentary wall of the mixing chamber, there being a clearance between the surface and the wall (see Fig. 1). Regarding claim 4, the surface of the tip of the first portion increases in circumferential length in the axial direction of the rotor (see drawings). Regarding claim 7, the ratio of the axial length of the first portion to the total length of the rotor is in the range 0.1 to 0.9. Regarding claim 11, a height of the second portion of the projection above the rotor is lower than or equal

to a height of the first portion (see drawings). Regarding claims 12 and 13, the height of the projection varies within each of the two portions. There are points on the first and second portions such that the ranges of claims 12 and 13 would be anticipated.

Regarding claim 14, the clearance between the tip surface and the mixing chamber wall decreases in a direction of rotation of the rotor (see Fig. 1).

4. Claims 15 is rejected under 35 U.S.C. 102(b) as being anticipated by Kleinlein et al. (US 2,686,336). Kleinlein ('336) discloses a mixing machine comprising a mixing chamber (6) in which there are disposed two rotors (1, 2) arranged for rotation in opposite directions about respective rotational axes (see Fig. 2), at least one of the rotors having a projection (3) that extends axially along the rotor and has a tip defining a circumferential surface whose circumferential length increases along the axial length of the rotor (see Fig. 1, where for rotor 1 the projection has a relatively small circumferential extent near the bottom of the figure and the circumferential extent continuously increases until it approaches 360 degrees at the top of the figure).

5. Claims 16 is rejected under 35 U.S.C. 102(a) and (e) as being anticipated by Inoue et al. (US 5,984,516). Inoue ('516) discloses a mixing machine comprising a mixing chamber (4) in which there are disposed at least two rotors (1,2) arranged for rotation in opposite directions about respective axes (see Fig. 1), at least of the rotors having a projection (7) that extends axially along the rotor and has a tip defining a circumferential surface that forms at least 5 % of the circumference of the rotor (see Fig. 2) and tapered (for example from 7c to 7b to 7a) so that the clearance defined between

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the tip and the mixing chamber wall decreases in the direction of rotation of the rotor (see Fig. 1; Figs. 11A and 11B; col. 2, lines 52-67).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pfleiderer (US 254,042) in view of Nortey (US 6,402,360). The machine of Pfleiderer ('042) was discussed above regarding claim 2. The loci of peripheries of the rotors do not intersect each other. However, Nortey ('360) recognized that intermeshing and non-intermeshing arrangement of rotors are alternatives for the purpose of mixing polymers such as rubber (See col. 1, lines 42-57). It is considered that it would have been obvious to one of ordinary skill in the art to have arranged the rotors of Pfleiderer ('042) in an intermeshing manner, because non-intermeshing and intermeshing arrangements are art recognized alternative for the same purpose as evidenced by Nortey ('360) col. 1, lines 42-57).

8. Claims 5, 6 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pfleiderer ('042), which was discussed above. Numerical values corresponding to the ranges of these claims are not explicitly disclosed by Pfleiderer ('042). However, in view of *Garder v. TEC Systems, Inc.* 220 USPQ 777 (Fed. Cir. 1984), it is considered

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that the recited relative dimensions do not patentably distinguish the claimed invention from the prior art.

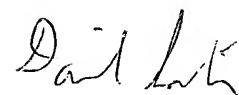
**Conclusion**

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David L. Sorkin whose telephone number is 571-272-1148. The examiner can normally be reached on 9:00 -5:30 Mon.-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David Sorkin

David L. Sorkin  
Examiner  
Art Unit 1723